

INSTALLATION GUIDE



SubDrive Utility 2 Wire - System Filter

This product is intended to reduce electromagnetic interference (EMI). Its use should be considered only if interference remains after best wiring and grounding practices have been implemented at the location. Because of the variety of equipment locations, power wiring methods, and grounding practices, it is impossible to ensure a specific amount of interference suppression. Although Franklin Electric has performed laboratory tests that show significant EMI reduction with this filter, we cannot predict the performance of this product in the field.

Refer to the SubDrive Utility Installation Manual for detailed setup and safety information, refer to www.franklinwater.com.

Installation

Remove System Power

⚠ WARNING

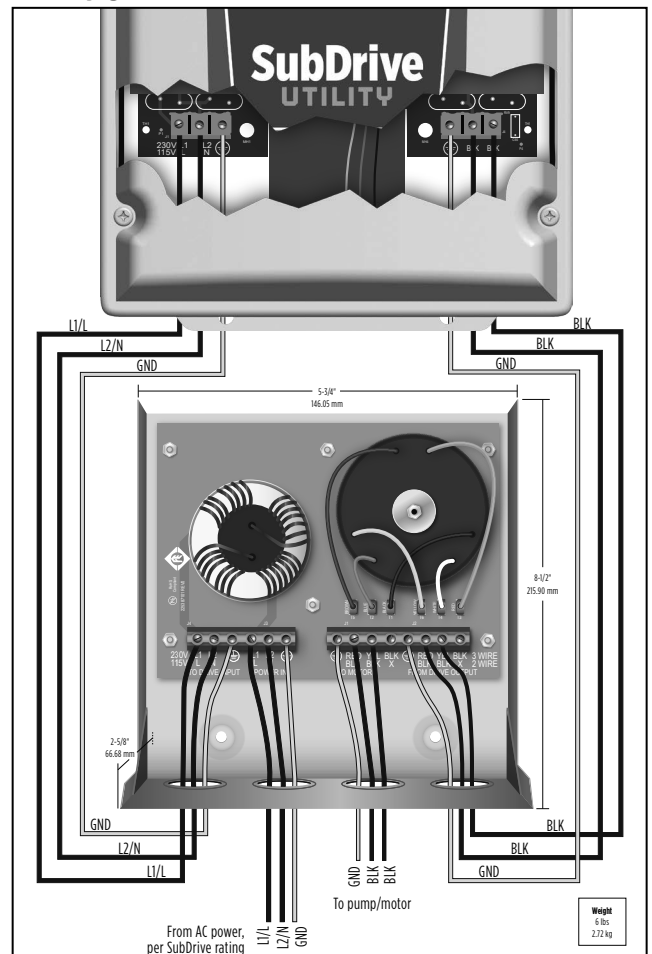
⚡ Risk of severe injury or death by electrical shock.

- Disconnect and lock out all power before installing or servicing equipment.
- Capacitors inside the drive and the filter can still hold a lethal voltage even after power has been removed — ALLOW FIVE MINUTES FOR DANGEROUS INTERNAL VOLTAGES TO DISCHARGE.

⚠ CAUTION

⚡ Risk of bodily injury or damage to pump or other equipment.

- This product should only be used with the Franklin Electric SubDrive Utility (UT2W) drive models 5870202003 and 5870202003XD.



Mounting

The SubDrive Utility System Filter is supplied in a NEMA 3R enclosure. Appropriate cables and cable fittings must be used in the installation to maintain the NEMA 3R rating.

1. Remove the thumbscrew from the bottom front cover of the System Filter.
2. Remove the cover from the System Filter.
3. Mount the System Filter to a flat surface using three screws (not included). Insert one screw through the top flange hole, and then two screws into two internal mounting holes.

Electrical Connections

Remove System Power

1. Disconnect electrical power to the controller at the main breaker. If previously connected to the supply mains, wait five (5) minutes for dangerous internal voltages within the controller to discharge.
2. Remove the cover from the SubDrive Utility controller following instructions in the SubDrive Utility manual.

Install Wiring

(Tighten all terminals to 5 in-lbs (0.55 Nm))

3. Route supply mains power and ground wires to the System Filter **POWER IN** terminals **L1** and **L2** (230 V) or **L** and **N** (115 V) with the green ground wire connected to the marked ground terminal.
4. Route power and ground wires from the System Filter **TO DRIVE INPUT** terminals **L1** and **L2** (230 V) or **L** and **N** (115 V) to the SubDrive Utility controller drive input terminals **L1** and **L2** (230 V) or **L** and **N** (115 V) respectively, with the green ground wire connected to the marked ground terminals.

- Route motor and ground wires from the SubDrive Utility controller output terminal block to the System Filter **FROM DRIVE** terminals **BLK** and **BLK** with the green ground wire connected to the marked ground terminal. The terminal marked **X** remains open (not connected).
- Route motor and ground wires from the System Filter **To MOTOR** terminals **BLK** and **BLK** and the marked ground terminal to the motor. The terminal marked **X** remains open (not connected). Motor connections shall be per the motor manual.

Final Installation Steps

- Fill all open, unused conduit openings of the System Filter with UL Listed conduit plugs.
- Replace and secure the System Filter cover and SubDrive Utility controller cover using required torque of 10 in-lbs (1.1 Nm).
- Upon completion of the installation, refer to the SubDrive Utility Owner's Manual for start-up and operation procedures.

Ratings and Specifications

Electrical Ratings

The System Filter consists of two circuits:

- One circuit for filtering SubDrive Utility mains supply inputs
- One circuit for filtering SubDrive Utility motor outputs

"Power Input" and "To Drive Input" circuit:

115/208-230 VAC, 20 A, 50/60 Hz, single-phase

"From Drive" and "To Motor" circuit:

115/208-230 VAC, 13.1 A, 50/60 Hz, single-phase, two wire

NOTE: The System Filter must be used with a single Sub-Drive Utility controller and a single motor. Do not use with multiple controllers or motors.

Environmental Ratings

- Type 3R
- Pollution Degree 2
- Max Ambient: 50 °C
- Max Altitude: 2000 m

The System Filter is UL Listed for the US and Canada per Standard UL 61800-5-1, Standard for Safety for Adjustable Speed Electrical Power Drive Systems - Part 5-1: Safety Requirements - Electrical Thermal and Energy and per Standard CSA C22.2 No. 274-13, Adjustable Speed Drives.

Special Considerations for Outdoor Use

The System Filter is suitable for outdoor use with a NEMA 3R rating; however, the following considerations should be made when installing the unit outdoors. The unit shall be:

- Mounted on a surface or backplate no smaller than the product's outer dimensions. Enclosures are capable of withstanding downward-directed rain only.
- Mounted vertically with the wiring end oriented downward and the cover properly secured (also applies to indoor installations).
- Protected from hose-directed or sprayed water as well as blowing rain. Failure to do so may result in product failure.
- Protected from direct sunlight or other locations subject to extreme temperatures or humidity.


Branch Circuit and Motor Protection

For details, refer to the SubDrive Utility Owner's Manual.

Maintenance

No maintenance is required for this product.

⚠ WARNING

 **High voltages capable of causing severe injury or death by electrical shock are present in this unit.**

- To reduce risk of electrical shock, disconnect power before working on or around the system. More than one disconnect switch may be required to de-energize the equipment before servicing
- Make sure the ground terminal is connected to the motor, control enclosures, metal plumbing, and other metal near the motor or cable using wire no smaller than motor cable wires.
- Do not remove the cover for wiring or periodic inspections while power is applied, or the unit is in operation.
- Wiring and periodic inspections should be performed at least 5 minutes after disconnecting and locking out the input power.
- Operate filter and control device with dry hands.
- Do not use filter and control device if power or motor cable is damaged.
- Perform wiring after filter has been mounted. Otherwise, electric shock or bodily injury can occur.

⚠ CAUTION

Risk of fire, secondary accidents, or bodily injuries such as skin burns.

- This equipment must not be used by children or persons with reduced physical, sensory or mental abilities, or lacking in experience and expertise, unless supervised or instructed. Children may not use the equipment, nor may they play with the unit or in the immediate vicinity.
- Equipment can start automatically. Lockout-Tagout before servicing equipment.
- Permanent magnet motors need to have a check valve (reverse flow preventer) installed above the pump to prevent dangerous voltages from generating on the motor leads when the pump spins backwards. This will also limit the pump/motor from running in up thrust conditions at every startup. Operation of this equipment requires detailed installation and operation instructions provided in this manual for use with this product.



For technical assistance, parts, or repair, please contact:

800.348.2420 | franklinwater.com

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Franklin Electric

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INSTALLATION GUIDE



SubDrive/MonoDrive Utility 3 Wire & 3 Phase - System Filter

This product is intended to reduce electromagnetic interference (EMI). Its use should be considered only if interference remains after best wiring and grounding practices have been implemented at the location. Because of the variety of equipment locations, power wiring methods, and grounding practices, it is impossible to ensure a specific amount of interference suppression. Although Franklin Electric has performed laboratory tests that show significant EMI reduction with this filter, we cannot predict the performance of this product in the field.

Refer to the SubDrive/MonoDrive Utility Installation Manual for detailed setup and safety information, refer to www.franklinwater.com.

Installation

Remove System Power

⚠ WARNING

⚡ Risk of severe injury or death by electrical shock.

- Disconnect and lock out all power before installing or servicing equipment.
- Capacitors inside the drive and the filter can still hold a lethal voltage even after power has been removed — ALLOW FIVE MINUTES FOR DANGEROUS INTERNAL VOLTAGES TO DISCHARGE.

⚠ CAUTION

Risk of bodily injury or damage to pump or other equipment.

- This product should only be used with the Franklin Electric drive models SubDrive Utility (UT3P) 5870202303 and 5870202303XD, or MonoDrive (UT3W) 5870202203..

Mounting

The SubDrive/MonoDrive Utility System Filter is supplied in a NEMA 3R enclosure. Appropriate cables and cable fittings must be used in the installation to maintain the NEMA 3R rating.

1. Remove the thumbscrew from the bottom front cover of the System Filter.
2. Remove the cover from the System Filter.
3. Mount the System Filter to a flat surface using three screws (not included). Insert one screw through the top flange hole, and then two screws into two internal mounting holes.

Electrical Connections

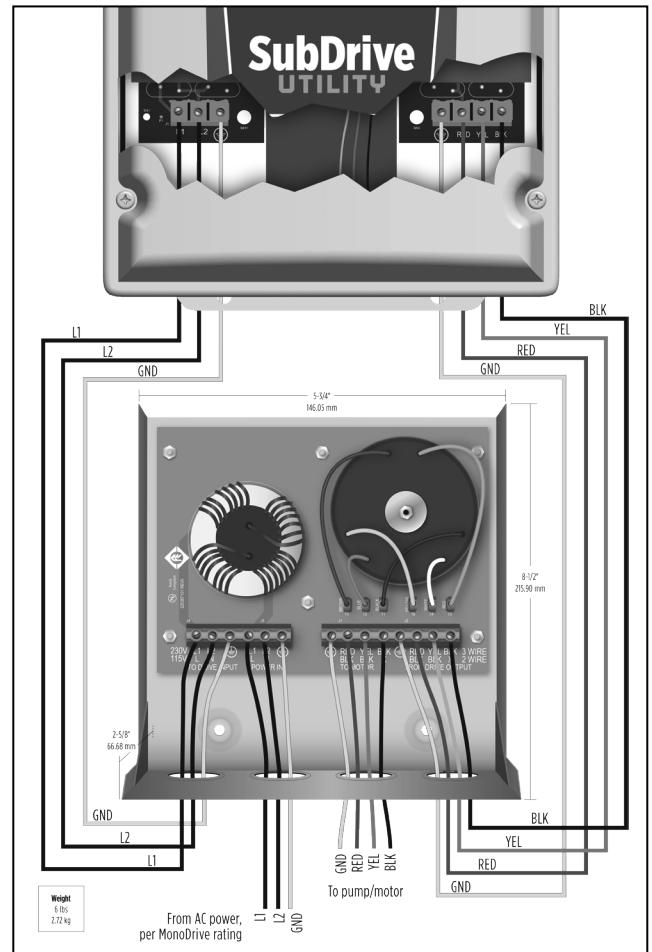
Remove System Power

1. Disconnect electrical power to the controller at the main breaker. If previously connected to the supply mains, wait five (5) minutes for dangerous internal voltages within the controller to discharge.
2. Remove the cover from the SubDrive/MonoDrive Utility controller following instructions in the SubDrive/MonoDrive Utility manual.

Install Wiring

(Tighten all terminals to 5 in-lbs (0.55 Nm))

3. Route supply mains power and ground wires to the System Filter **POWER IN** terminals **L1** and **L2** (230 V) or **L** and **N** (115 V) with the green ground wire connected to the marked ground terminal.
4. Route power and ground wires from the SubDrive/MonoDrive Utility System Filter **TO DRIVE INPUT** terminals **L1** and **L2** (230 V) or **L** and **N** (115 V) to the SubDrive/MonoDrive Utility controller drive input terminals **L1** and **L2** (230 V) or **L** and **N** (115 V) respectively, with the green ground wire connected to the marked ground terminals.



- Route motor and ground wires from the SubDrive/MonoDrive Utility controller output terminal block to the System Filter **FROM DRIVE** terminals **RED, YEL, and BLK** (red to red, yellow to yellow, and black to black) with the green ground wire connected to the marked ground terminal.
- Route motor and ground wires from the SubDrive/MonoDrive Utility System Filter **To MOTOR** terminals **RED, YEL, and BLK** (red to red, yellow to yellow, and black to black) and the marked ground terminal to the motor. Motor connections shall be per motor manual.

Final Installation Steps

- Fill all open, unused System Filter conduit openings with UL Listed conduit plugs.
- Replace and secure the System Filter cover and SubDrive/MonoDrive Utility controller cover using required torque of 10 in-lbs (1.1 Nm).
- Upon completion of the installation, refer to the SubDrive/MonoDrive Utility Owner's Manual for start-up and operation procedures.

Ratings and Specifications

Electrical Ratings

The SubDrive/MonoDrive Utility System Filter consists of two circuits:

- One circuit for filtering SubDrive/MonoDrive mains supply inputs
- One circuit for filtering SubDrive/MonoDrive motor outputs

"Power Input" and "To Drive Input" circuit:

230 VAC $\pm 10\%$, 20 A, 50/60 Hz, single-phase, three wire

"From Drive" and "To Motor" circuit:

230 VAC max., 13.2 A, 50/60 Hz, single-phase

230 VAC max., 8.1A, 50/60Hz, three-phase

NOTE: The SubDrive/MonoDrive Utility System Filter must be used with a single SubDrive/MonoDrive Utility drive and a single motor. Do not use with multiple controllers or motors.

Environmental Ratings

- Type 3R
- Pollution Degree 2
- Max Ambient: 50 °C
- Max Altitude: 2000 m

The SubDrive/MonoDrive Utility System Filter is UL Listed for the US and Canada per Standard UL 61800-5-1, Standard

for Safety for Adjustable Speed Electrical Power Drive Systems - Part 5-1: Safety Requirements - Electrical Thermal and Energy and per Standard CSA C22.2 No. 274-13, Adjustable Speed Drives.

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The System Filter is suitable for outdoor use with a NEMA 3R rating; however, the following considerations should be made when installing the unit outdoors. The unit shall be:

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- Protected from hose-directed or sprayed water as well as blowing rain. Failure to do so may result in product failure.
- Protected from direct sunlight or other locations subject to extreme temperatures or humidity.

Branch Circuit and Motor Protection

For details, refer to the SubDrive/MonoDrive Utility Owner's Manual.

Maintenance

No maintenance is required for this product.

⚠ WARNING

⚡ High voltages capable of causing severe injury or death by electrical shock are present in this unit.

- To reduce risk of electrical shock, disconnect power before working on or around the system. More than one disconnect switch may be required to de-energize the equipment before servicing
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- Operate filter and control device with dry hands.
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